

**SEMICONDUCTOR STRUCTURE AND METHOD OF MAKING SAME****ABSTRACT**

5           A semiconductor structure includes a substrate having a surface and being  
made of a material that provides atypical surface properties to the surface, a bonding  
layer on the surface of the substrate, and a further layer molecularly bonded to the  
bonding layer. A method for fabricating such a semiconductor structure includes  
10       providing a substrate having a surface and being made of a material that provides  
atypical surface properties to the surface, providing a bonding layer on the surface of  
the substrate, smoothing the bonding layer to provide a surface that is capable of  
molecular bonding, and molecularly bonding a further layer to the bonding layer to  
form the structure. The atypical surface properties preferably include at least one of a  
15       roughness of more than 0.5 nm rms, or a roughness of at least 0.4 nm rms that is  
difficult to polish, or a chemical composition that is incompatible with molecular  
bonding.

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